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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

LAXTON, GARY L

ART UNIT	PAPER NUMBER
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2838

DATE MAILED: 12/29/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/469,619

Applicant(s)

AIHARA ET AL. 

Examiner

Gary L. Laxton

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 02 October 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 4-14 and 16-28 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 4-14, 16-21 and 23-28 is/are allowed.
- 6) ☒ Claim(s) 22 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. §§ 119 and 120

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
* See the attached detailed Office action for a list of the certified copies not received.
- 13) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application) since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.
a) ☐ The translation of the foreign language provisional application has been received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121 since a specific reference was included in the first sentence of the specification or in an Application Data Sheet. 37 CFR 1.78.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 21.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

DETAILED ACTION

Response to Arguments

1. Applicant's arguments filed 10/02/03 have been fully considered but they are not persuasive.

Regarding applicant's argument with respect to claim 22; the combination of Faberman et al and Brand et al does teach the claimed limitations. Brand et al teach parallel connecting (multiplexing) a plurality of power supply units (see figure 8). There is a battery (any one of 550, 551, 560, 561, 570, 571) that is connected to the plurality of power supplies and to the resulting plurality of DC/DC converters for redundancy purposes as claimed (see also col. 6 lines 60-67 and col. lines 1-8 for further explanation).

Claim Rejections - 35 USC § 103

2. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Faberman et al in view of Brand et al.

Faberman et al disclose a power supply (figure 1); an AC/DC converter (D1A) which receives AC power (E1A) and converts it to DC voltage (E2A); the AC/DC converter includes a control circuit to control an output voltage from the AC/DC

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converter to be equal to a predetermined DC voltage higher than an effective value of the AC input voltage (col. 6 lines 30-40; e.g. AC in = 120volts and voltage at E2A = 330volts; thus, D1A must be a controlled boost rectifier circuit.); a DC/DC converter (T1A and D2A) which receives the DC power from the AC/DC converter and controls a level of an output voltage to be equal to a level of a voltage to be used by a load (E5A, E6A, E7A); a DC converter (33) which is connected to an input of the DC/DC converter; and a DC power storage means (31) which supplies electric power to the DC/DC converter through the DC converter (33) via (E4A); wherein the DC converter is bi-directional (figure 1; e.g. "bi-directional power supply") for charging and discharging the DC storage means (31); wherein the DC converter controls and output voltage to be boosted over a voltage of the DC power storage means (33) while supplying electric power to the DC/DC converter (T1A and D2A); wherein the DC converter (33) includes a first converter (S3B, S4B) having an AC terminal (figure 2; T1B:C) and a DC terminal (figure 2; C1B, C2B) connected to the input of the DC/DC converter (see figure 1); a transformer (figure 2; T1B:A, T1B:B, T1B:C) having a high voltage side (figure 2; T1B:C) and a low voltage side (figure 2; T1B:A, T1B:B); and a second converter (figure 2; S1B, S2B) for connecting to the battery (B1B) wherein the as shown in figure 2, the transformer isolates the battery from the rest of the power supply circuit.

However, Faberman et al does not disclose power factor correcting and parallel connecting a plurality of power supplies with one another.

Brand et al teach the power supply employs power factor correction (Abstract) and parallel connecting plural power supplies with one another figures 8-10 (see also col. 6 lines 60-67 and col. lines 1-8 for further explanation).

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Therefore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to employ power factor correction techniques in order to maximize circuit efficiency, as is well known in the art and desired, that power factor correction provides; and furthermore, it would have been obvious to one having ordinary skill in the art at the time the invention was made to connect additional DC/DC converters in series with the other converters in order to provide clean regulated voltage to the load and to parallel connect either the AC/DC converters or the DC/DC converters or both in order to provide for redundancy in case of converter failure as taught by Brand et al.

Allowable Subject Matter

4. Claims 4-14, 16-21 and 23-28 are allowed.

5. The following is a statement of reasons for the indication of allowable subject matter:

Claims 4-14 and 16-21 are allowed for the reasons stated in the last office action.

Concerning claims 23-28, prior art fails to disclose or suggest, inter alia, a power supply having an AC/DC converter to boost an AC voltage to a DC voltage higher than the AC input voltage; a DC converter to convert DC power from a battery into a DC voltage having a level substantially equal to the level of DC voltage from the AC/DC converter; the DC converter controls the DC voltage to be boosted over the battery voltage to be equal to the level of the DC voltage from the AC/DC converter when there is a power

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interruption or when the AC/DC converter cannot maintain sufficient DC voltage for the load.

Conclusion

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).


A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

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7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gary L. Laxton whose telephone number is (703) 305-7039. The examiner can normally be reached on Monday thru Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Michael Sherry can be reached on (703)308-1680. The fax phone number for the organization where this application or proceeding is assigned is (703)-872-9306.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 308-0956.


12/22/03
MICHAEL SHERRY
SUPERVISORY PATENT EXAMINER
TECHNOLOGY CENTER 2800

Gary L. Laxton
Patent Examiner
Art Unit 2838

GLL